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EXAMINER	
GILBERT, WILLIAM V	

ART UNIT	PAPER NUMBER
3635	

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03/17/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/534,938	VAN ERP, GERARDUS MARIA	
	Examiner	Art Unit	
	William V. Gilbert	3635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/25/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a final Office action. Claims 1-38 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9, 24-27, 29-33 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pollard (U.S. Patent No. 3,810,337) in view of Mirmiran (U.S. Patent No. 6,123,485).

Claim 1: Pollard discloses a hybrid structural module comprising a tubular composite member (Fig. 1: 10, 16), a filled resin system (38) located within the member and a steel member (28) located in the rein system, and the resin system binds the steel and tubular members together. While Pollard discloses that the tubular member can be made of numerous materials, including plastic (Col. 3, lines 38-45) it does not disclose the tubular member is fiber composite. Mirmiran discloses a fiber composite tubular member (Fig. 4b: 442) with reinforcing members and a cured substance. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make the tubular member from the fiber composite because the members are functionally equivalent and would perform equally as well.

Claim 2: the limitation "pultruded" is considered product-by-process; therefore, determination of patentability is based on the product itself. See M.P.E.P. §2133. The patentability of the product does not depend on its method of production. If the product-by-process claim is the same as or obvious from a product of the same prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695 (Fid. Cir. 1985).

Claim 3: the member is rectangular in cross section (as shown in Fig. 1).

Claim 4: the internal void is rectangular (as shown).

Claim 5: while the tubular member has fibers (see Mirmiran) with longitudinal axial fibers (Col. 2, lines 55-65), it does not disclose that the majority of the fibers are orientated in a longitudinal direction. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because optimization of an invention will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claim 6: the resin is polyurethane (Pollard, Col. 4, lines 1-5).

Claim 7: the resin would adhere to both the tube and steel (as shown). This would occur due to the resinous quality of the polyurethane.

Claim 8: polyurethane is inert.

Claim 9: the prior art of record does not disclose the compression strength of the material. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because optimization of an invention will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claim 24: the steel member is a round bar (as shown).

Claim 25: steel has carbon in it, so the member is plain carbon steel as best understood by the examiner in light of the specification.

Claim 26: while as shown in Pollard the steel members can be made shorter than the tubular member, it does not disclose the limitation as claimed. It would have been obvious at the time the invention was made to a person having ordinary skill in the art as a matter of design choice to have the dimensions as claimed because applicant failed to state a criticality for the necessity of the limitation and the prior art of record is capable of being designed to meet the limitation as claimed. See MPEP 2144.04(IV)(A) citing *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Claim 27: the tubular member as shown is completely filled with resin (note that all available space in the tube is filled.)

Claim 29: the steel member extends outwardly from the tubular member and the resin (as shown in Pollard: Fig. 1).

Claim 30: multiple steel members are present (as shown).

Claim 31: the multiple steel members are spaced substantially an equal distance away from each other (as shown).

Claim 32: the limitation "prestressed" is considered product-by-process; therefore, determination of patentability is based on the product itself. See M.P.E.P. §2133. The patentability of the product does not depend on its method of production. If the product-by-process claim is the same as or obvious from a product of the same prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695 (Fid. Cir. 1985). See however, where the tightening of nuts (Pollard: 36) results in a "prestressed" member. The limitation "prior to the hybrid member being formed" is considered product-by-process for the same reasons stated above.

Claim 33: Pollard discloses forming a tubular member (10, 16), locating at least one steel member (32) within the member, and locating a filled resin system (38) within the composite member to bind the steel member and tubular members together. While Pollard discloses that the tubular member can be made of numerous materials, including plastic (Col. 3, lines 38-45) it does not disclose the tubular member is fiber composite. Mirmiran discloses a fiber composite tubular member (Fig. 4b:

4442) with reinforcing members and a cured substance. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to substitute these materials because the members are functionally equivalent and would perform equally as well.

Claims 36 and 37: the steel member would be lowered into the composite module and the resin would be poured into the module, though Pollard does not disclose the particular order of the sequence as claimed. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the order as claimed because selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results. M.P.E.P. §2144.04(IV)(C) citing *In re Burhans*, 154 F.2d 690 (CCPA 1946).

Claim 38: the prior art of record discloses the claimed invention except for the expected strain of the steel member. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because optimizing the strain of the steel member will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it

is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claims 1 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christian (U.S. Patent No. 5,253,458) in view of Mirmiran and Pollard.

Claim 1: Christian discloses a hybrid structural module comprising a tubular member (12) and a filled system (14) located within the tubular member and elongated member in the system and the system binds the member to the tube. Christian discloses that the member is made of PVC, but not that it is a fiber composite member. Mirmiran discloses a filled tubular member (442) that is fibrous. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because the two materials are functionally equivalent and would perform equally as well. Additionally, while Christian discloses the core is foam, it

does not disclose the material is resinous. Pollard discloses a structural member with a resinous foam core. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to substitute these materials because the two foams are functionally equivalent and would perform equally as well. Last, while the member discloses an electrical conduit (20), Christian does not disclose that the member is steel. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the conduit as steel because it is well known in the art to have conduit made of steel for its strength and durability.

Claim 28: while Christian does not disclose that the member is completely encompassed by the filled system (as shown), it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation to avoid exposed conduit which would not be aesthetically pleasing.

Claims 10-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pollard and Mirmiran as applied to claim 1 above, and further in view of Andersen (U.S. Patent No. 5,508,072).

Claim 10: the prior art of record discloses the claimed invention including a resin system, but it does not disclose a light and heavy aggregate within the system. Andersen discloses a polyurethane panel with light and heavy aggregates (Col. 11, lines 45-55; Col. 65: lines 10-15, respectively). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the aggregates because these compositions are well known in the art in that the light aggregate aids in the production of an overall lighter structure and the heavy aggregate is known for aiding in the strengthening of the member, which would be a desired and predictable result with the member in Pollard in view of Mirmiran.

Claims 11, 12 and 15: The prior art of record discloses the claimed invention except for the specific gravity of the light aggregate, the particle size and the compression strength, though these measurable properties are inherent features of such objects. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because differences in these physical properties not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not

inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claim 13: the prior art of record disclose the claimed invention except for the percent volume of the aggregate. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because differences in concentration will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claims 14 and 16: the light aggregate is glass spheres (Andersen: Col. 11, lines 45-55), which are center spheres as best understood by the examiner.

Claims 17, 18 and 20-23: the prior art of record discloses the claimed invention for specific gravity of the heavy aggregate, the volume of the aggregate or the particle size. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have this limitation because differences in such properties will not support patentability of subject matter encompassed by the prior art unless there is evidence indicating such a limitation is critical. See M.P.E.P. §2144.05 "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454 (CCPA 1955) (Claimed process which was performed at a temperature between 40C and 80C and an acid concentration between 25% and 70% was held to be *prima facie* obvious over a reference process which differed from the claims only in that the reference process was performed at a temperature of 100C and an acid concentration 10%.)

Claim 19: the heavy aggregate is basalt (Col. 65, lines 10-15).

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pollard, Mirmiran and Andersen as applied to claim 10 above, and further in view of Colby (U.S. Patent No. 5,952,053).

Claim 23: the prior art of record discloses the claimed invention except for the addition of a thixotrope to the resin. Colby discloses a polyurethane material which contains a thixotrope (Col. 4, lines 30-40). It would have been obvious at the time the invention was made to a person having ordinary skill in the art because these materials are well known in the art for aiding in altering the viscosity of a polymeric material, and one of ordinary skill in the art would add such a material in order to achieve a desired viscosity when manufacturing the material.

Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pollard and Mirmiran as applied to claim 33 above, and further in view of Welty (U.S. Patent No. 2,925,831).

Claims 34 and 35: the prior art of record discloses the claimed invention except that the member is abraded and cleaned or etched. Welty discloses a system where a member is cleaned and roughened (which is abrasion or etching) prior to attaching

one object to another (Col. 3, lines 23-35). It would have been obvious at the time the invention was made to a person having ordinary skill in the art because it is well known in the art to rough a surface of an object prior to application of resinous substances so that proper bonding will occur between the two substances.

Response to Arguments

2. The following addresses applicant's remarks/arguments dated 25 November 2008:

Information disclosure statement:

Applicant's submission of the IDS dated 25 November 2008 is noted and entered.

Objection to the specification:

Applicant's amendment to include the abstract on a separate sheet of paper is noted and the objection is withdrawn.

Objection to the claims:

Applicant's renumbering of the second claim 24 to claim 38 is noted and the objection is withdrawn.

Claim rejection - 35 USC §112:

Applicant's amendment to claim 35 overcomes the rejection and it is withdrawn.

Claim rejection - 35 USC §103:

Regarding applicant's arguments to the limitation "pultruded" (claim 2), the examiner maintains that this is a product-by-process for the reasons set forth above in the rejection and only the final product is provided patentable weight. Regarding the limitation "pre-stressed" (Claim 32), the examiner considers this product-by-process as well, but see rejection above for explanation.

Applicant's arguments with respect to the claims are respectfully not persuasive. The examiner respectfully disagrees with applicant's argument that the Pollard reference (cited above) does not provide a "filled resin". Applicant has not provided a definition of a "filled resin" in the specification, and the examiner is permitted to use the broadest reasonable interpretation in light of the specification. In the present case, the examiner interpreted the resin (38, see claim 1) as a filler for the apparatus, hence a "filled resin system". The examiner further notes that chemically, the resins can be made from the same material (e.g. applicant's claim 6 versus

Pollard: Col. 4, lines 1-5). As a result, the examiner maintains the rejection was proper.

The examiner further disagrees with applicant's statement that the reinforcing members are not bonded to any other member. See Pollard Col. 4, lines 1-5 which discloses that "a plastic foam [is preferable]…because of its excellent bonding characteristics to metal." It would respectfully seem clear to one of ordinary skill in the art that if a resin (Pollard: 38) were poured into the system, it would bond to the reinforcing members (30, 32).

Last, applicant's arguments regarding the incorporation of the Mirmiran reference (cited above) is not persuasive. The reference was used merely to show that a fiber composite material can be used as a "shell" to receive a cured substance, and Pollard is clear that other materials may be used (Col. 3, lines 39-44).

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS

of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William V. Gilbert whose telephone number is 571.272.9055. The examiner can normally be reached on Monday - Friday, 08:00 to 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on 571.272.6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. V. G./
Examiner, Art Unit 3635
/Basil Katcheves/
Primary Examiner, Art Unit 3635